

What is claimed is:

1. Apparatus, comprising:
 - a signal acquisition device for acquiring a signal under test (SUT) and
5 generating therefrom a stream of acquired samples, said signal acquisition device having associated with it a first bandwidth defining a nominal pass band;
 - at least one digital filter, for imparting a gain equalization function to said acquired SUT samples within a spectral region including and extending beyond said nominal passband; and
 - 10 a controller, for generating a display signal suitable for use by a display device, said display signal representing waveform imagery associated with said gain equalized SUT.
2. The apparatus of claim 1, wherein:
 - 15 said spectral region including and extending beyond said first bandwidth defines a second bandwidth further defining a second pass band; and
 - said at least one digital filter selectively amplifying signal components within a spectral region delineated by said first and second bandwidths.
- 20 3. The apparatus of claim 1, wherein said signal acquisition device comprises:
 - an amplifier, for controllably amplifying said SUT to produce an amplified SUT; and
 - an analog to digital (A/D) converter, for sampling said amplified SUT to
25 form thereby said stream of acquired samples.
4. The apparatus of claim 1, wherein said at least one digital filter has associated with it, filter coefficients adapted for filtering a SUT according to at least one of Ethernet, DVI, 3GIO, and Infiniband.
- 30 5. The apparatus of claim 1, wherein said controller generates a graphical user interface (GUI) suitable for use by said display device, said controller

adapting operating parameters of said digital filter in response to user selections.

6. The apparatus of claim 5, wherein said GUI comprises at least one of a
5 selectable bandwidth control menu and a selectable digital filter menu.

7. The apparatus of claim 6, wherein said bandwidth control menu
comprises a selectable bandwidth extension feature.

10 8. The apparatus of claim 7, wherein said bandwidth control menu further
comprises selectable analog filtering control features.

9. The apparatus of claim 8, wherein said analog filtering control features
are turned off during said gain equalization function.

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10. The apparatus of claim 6, wherein said digital filter menu comprises:
a plurality of digital filter selections for enabling user selection of digital
filter coefficients adapted for a SUT according to at least one of Ethernet, DVI,
3GIO, and Infiniband.

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11. The apparatus of claim 1, wherein said waveform imagery comprises
gain as a function of frequency response of said digitally filtered SUT.

12. Apparatus, comprising:

25 a signal acquisition device, having a plurality of channels for acquiring
respective signals under test (SUT) and generating therefrom respective
streams of acquired samples;

a plurality of digital filters, each of said digital filters associated with a
respective channel, for filtering respective acquired SUT samples; and

30 a controller, for generating a display signal suitable for use by a display
device, said display signal representing waveform imagery associated with at
least one of said digitally filtered SUT sample streams, wherein said controller,

in a first mode of operation, causes said digital filters to operate in a manner tending to equalize gain parameters of said plurality of channels.

13. The apparatus of claim 12, wherein said plurality of channel waveforms
5 are substantially in-phase.

14. The apparatus of claim 12, wherein said signal acquisition device comprises:

an amplifier, for controllably amplifying said SUT to produce an amplified
10 SUT; and

an analog to digital (A/D) converter, for sampling said amplified SUT to form thereby said stream of acquired samples.

15. The apparatus of claim 12, wherein said plurality of digital filters have
15 associated with it, coefficients adapted for a SUT according to at least one of Ethernet, DVI, 3GIO, and Infiniband.

16. The apparatus of claim 12, further comprising a graphical user interface (GUI) displayed by said display device in response to a user initiating vertical
20 control parameters for said SUT.

17. The apparatus of claim 16, wherein said GUI comprises at least one of a selectable bandwidth control menu and a selectable digital filter menu.

25 18. The apparatus of claim 17, wherein said bandwidth control menu comprises a selectable channel matching feature.

19. The apparatus of claim 18, wherein said bandwidth control menu further comprises selectable analog filtering control features.

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20. The apparatus of claim 19, wherein said analog filtering control features are turned off during said first mode of operation.

21. The apparatus of claim 16, wherein said digital filter menu comprises:
a plurality of digital filter selections for enabling user selection of digital
filter coefficients adapted for a SUT according to at least one of Ethernet, DVI,
3GIO, and Infiniband.

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22. The apparatus of claim 12, wherein said waveform imagery comprises
gain as a function of frequency response of said digitally filtered SUTs.

23. A method, comprising:

10 acquiring an analog signal under test (SUT);
generating therefrom, a stream of acquired samples having associated
with it a first bandwidth defining a nominal pass band;
digitally filtering said acquired SUT samples for imparting a gain
equalization function to said acquired SUT samples within a spectral region
15 including and extending beyond said first bandwidth, wherein said spectral
region including and extending beyond said nominal passband is defined by a
second bandwidth; and
generating a display signal suitable for use by a display device, said
display signal representing waveform imagery associated with said gain
20 equalized SUT.

24. The method of claim 23, further comprising:

selectively amplifying signal components within said spectral region
delineated by said first and second bandwidths.

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25. In a signal acquisition device, having a plurality of channels for acquiring
a respective plurality of analog signals under test (SUT), a method, comprising:

generating from said acquired plurality of SUTs, respective streams of
acquired samples;

30 selectively imparting a channel matching function to said acquired SUTs;
and

generating a display signal suitable for use by a display device, said
display signal representing waveform imagery associated with at least one of

said digitally filtered SUT sample streams, wherein, in a first mode of operation, said digital filters operate in a manner tending to equalize gain parameters of said plurality of channels.

- 5 26. The method of claim 25, wherein said plurality of channel waveforms are substantially in-phase.